

### **Amendments to Specification:**

Please replace the paragraph beginning at page 31, Line 3 with the following paragraph:

The measured signal is represented by a set of even periodic functions with a corresponding number of free parameters (one of these free parameters is the overlay error itself). For example, each measured signal may be represented by a Fourier series expansion having any number of terms consistent with the number of targets measured. The number of terms depends on the number of targets measured, scatterometry signal properties, target properties, and information required. In a Fourier series having three terms, a measured signal may be represented by:

$$\cancel{k + l \cos\left(\frac{2\pi}{P}(V_i + E)\right) + m \cos\left(\frac{4\pi}{P}(V_i + E)\right)}$$
$$\underline{k + l \cos\left(\left(\frac{2\pi}{P}\right)(V_i + E)\right) + m \cos\left(\left(\frac{4\pi}{P}\right)(V_i + E)\right)}$$

where k is a constant; l is an amplitude of the first harmonic; m is the amplitude of the second harmonic; Vi represents the predefined offset; P is the period; and E is the overlay error. The number of targets measured is to be greater or equal to the cumulative number of free unknown parameters in the chosen function. In the above three term example, there are four unknowns: k, l, m, and E where the period is 360 degrees or 2Π radians. Therefore, four targets may be used to solve for the four unknowns which include overlay E.